

Name: _____ P: _____

HW #32 Find Unknown Measurements given Area or Perimeter

FORM A

Geometry: Due Tuesday, October 29th, 2013

1. A square and a rectangle have the same area. If the side length of the square is 8 inches, what is the width of the rectangle if the length of the rectangle is 4?

$8 \times 8 = 64$
 $A = S^2$
 $8^2 = L \cdot W$
 $64 = 4 \cdot W$
 $16 = W$

*Substitute "S" & "L"
*Then solve for "W"!

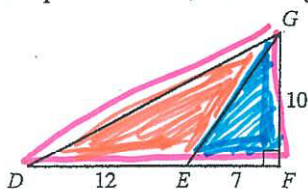
Width: 16 (units!)

2. The perimeter of a rectangle is 64 feet. The width of the rectangle is half as long as its length. Find the length and width of the rectangle.

$P = 64$
 $P = 2L + 2W$
 $64 = 2L + 2W$
 $32 = L + W$
 $W = \frac{1}{2}L$
 $32 = L + \frac{1}{2}L$
 $32 = \frac{3}{2}L$
 $L = \frac{64}{3}$
 $W = \frac{32}{3}$

(list formula)
substitute from given info. in problem.
① Substitute 64 in for P
② Substitute what W = in for w in the perimeter formula.
③ Solve for L
④ Solve for W

3. In the figure below the lengths of line segments DE, EF, and FG, are given, in units. What is the area, in square units, of triangle DEG?



- A. 29
- B. 47.5
- C. 60
- D. $6\sqrt{149}$
- E. 120

$\triangle DEG \sim \triangle GFE$

4. A square and a semicircular region have the same perimeter. If the length of the radius of the semicircular region is 16, what is the length of one side of the square?

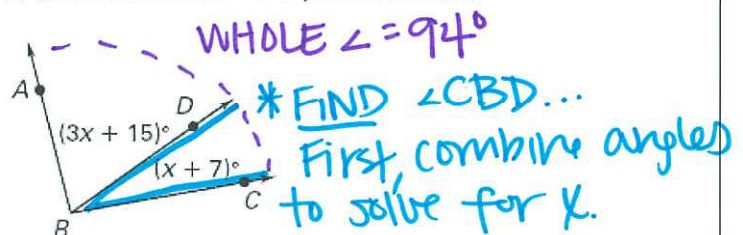
$P_{\text{square}} = 4s$
 $P_{\text{semicircle}} = \frac{1}{2}(2\pi r) + 2r$
 $4s = \pi r + 2r$
 $4s = 16\pi + 32$
 $s = 4\pi + 8$

*Substitute what you know & solve for "s"

Side = $4\pi + 8$ (units!)

5. A rectangle has an area of 60 meters, and a width of 4 meters. What is the perimeter of the rectangle? TRY on your own. Start by drawing picture & listing formulas.

6. Given $m\angle ABC = 94^\circ$, find $m\angle CBD$

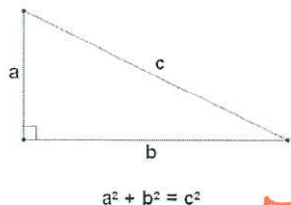


GRASP REVIEW!

(Mind the GAP with complete sentences!)

Example of what this looks like

7. If the coordinates of a square that is inscribed in a circle are $(-3,6)$, $(5,6)$, $(-3,-2)$, and $(5,-2)$; what is the area of the circle? (Note you will have to use the Pythagorean Theorem and might have to look up what inscribed means. We believe in you!)



G

R

- Inscribed = Square is IN the circle & its 4 corners touch the circle.
- Coordinates: _____
- Pythagorean Theorem: $a^2 + b^2 = c^2$ - - - - - (used for RIGHT triangles)

A

Because I am given coordinates, I will _____ them on the attached graph paper. I will then ~~as~~ draw a _____ around the square. I will draw a line between opposite corners of the _____ of the circle. This will allow me to find the _____ of the circle. I will divide by _____ to find the _____ of the circle. Finally, I'll find the _____.

S

PROVE it. This must be a SOLID effort!

P